

# NTSA's Training Industry *news*

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## Current *news*

### NATO Seeks More ISR for Afghan Combat

Reprinted from *Defense News*

NATO's ability to conduct surveillance and share information in Afghanistan should get a boost from six German Tornado reconnaissance aircraft that arrived in April and from Italian Predator B unmanned aerial vehicles expected soon. But military officers say the alliance still needs more assets to cover this vast country, and hurdles to sharing data remain.

The Tornados fly from Mazar-e-Sharif, Afghanistan, to support NATO troops in southern Afghanistan, where the Taliban insurgency has regained some momentum. Their reconnaissance pods have infrared capabilities and are available for targeting for low- and medium-altitude flights.

Officers with the NATO-led International Security Assistance Force could not say when the Predators would arrive.

The International Security Assistance Force's intelligence chief in Kabul, Canadian Army Brig. Gen. Jim Ferron, said the Germans and the Italians should be commended for adding much-needed capability.

"But it will not satisfy the entire need of this mission from an ISR perspective," he said. "So it should be viewed as contributing to the overall capability and a very welcome contribution."

Asked what more is needed, Ferron said, "Enough to cover the country."

### Support Group

Reprinted from *Defense Daily*

Rep. Trent Franks (R-AZ) announced in late June the formation of a missile defense caucus that will seek to fund, build and modernize missile defense programs to offset threats from terrorists or other nations developing advanced missile systems, he said in a statement. Three Democrats joined a number of Republicans on the caucus including co-chairman Rep. Jim Marshall (GA), a member of the House Armed Services Committee; Rep. Bud Cramer (AL), a member of the House Appropriations Defense subcommittee and Rep.

Henry Cuellar (TX). In addition to 33 caucus members from the GOP, Republican co-chairs are Rep. Pete Sessions (TX) and Rep. Doug Lamborn (CO).

### Off the Rails

Reprinted from *Jane's Defense Weekly*

As inaugurations go, this was something out of the ordinary. Dispensing with the orthodoxy of scissors, the dedication of the new electromagnetic launch facility on 16 January saw the ceremonial ribbon pierced by a hypervelocity projectile fired from a developmental 90mm bore electromagnetics gun.

The event, held at the U.S. Naval Surface Warfare Center Dahlgren Division, Virginia, and hosted by the U.S. Office of Naval Research, saw the test shot fired with a muzzle energy of 7.4 MJ to achieve a velocity of 2,146 m/s. Perhaps more significantly, the opening of the new facility was a very public reaffirmation of the U.S. Navy's faith in the high-energy electromagnetic railgun as a transformational weapon system that could revolutionize naval strike operations by delivering hypervelocity projectiles to pinpoint accuracies and extended ranges.

Dahlgren's launch test facility is just the start. The Navy's goal is to develop a tactical system that can continuously deliver precision rounds ashore from ships that are more than 300 nautical miles at sea. Although the rounds will contain little or no high-explosive material, they will be able to inflict damage to their targets through their high impact velocity.

Electromagnetic railguns overcome the limitations of conventional guns (which use an expanding ball of heated gas to force the projectile along the length of the gun) to offer extended ranges, short flight times and high energy on target lethality. Furthermore, the absence of energetic materials also eliminates the need for explosive safety standards for manufacturing, transportation, handling and storage.

By using an extremely high current flow to create a powerful electromagnetic force, the projected naval railgun could launch projectiles at speeds greater than M7.0. The projectile's trajectory takes it quickly exo-atmospheric (allowing it to travel drag-

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# President's *notes*

Rear Adm. Fred Lewis, USN (Ret.)

## For NTSA Members:

**T**he second annual Capitol Hill Modeling and Simulation Exhibition, held on July 19, was a complete success, with nearly 30 participants showcasing a wide range of simulation applications. The event, which is the largest display of simulation technology held in the National Capitol region, attracted heavy and enthusiastic attendance from Members of Congress and staffers. Representatives from the exhibiting corporations and organizations were on hand to demonstrate the diverse uses of the technology on display.

The Congressional Modeling and Simulation (M&S) Caucus, headed by Rep. Randy Forbes (VA-04) and Rep. Solomon Ortiz (TX-24), hosted the event, which was sponsored by NTSA. The Exhibition was particularly effective in demonstrating how modeling and simulation are being incorporated into an ever-wider range of learning and predictive applications. On hand were demonstrations of hands-on surgery, building design techniques, city emergency management and evacuation, as well as ground combat and cockpit simulators. I was particularly pleased to see so many members and staffers in attendance, all fascinated by the technology and its implications for the future. During opening remarks, Rep. Forbes made the point that staffers and Members should take away from the Exhibition the message that this technology is now indispensable not only to national security but is gaining a vital foothold in many other important areas. He stressed that modeling and simulation enhances jointness among agencies as they are better able to train for complex operations in a joint virtual environment, therefore embedding such behaviors. He stressed that this application has great benefits for training with our allies, as well, and then singled out health care as another area where the technology was making an ever-increasing contribution.

I am particularly pleased that H. Res. 487, sponsored by the Caucus, was passed unanimously shortly before the Exhibition. H. Res. 487 declares modeling and simulation to be a critical technology which makes a vital and unique contribution to our nation's security, prosperity and economic competitiveness (see more information on H. Res. 487 on pg. 9 of this issue). With the signal success of the first two annual Capitol Hill Modeling and Simulation Exhibitions, and the passage of H. Res. 487, we are well on our way to insuring that decision makers at the national level maintain a constant awareness of the importance of our community of practice and will work to foster the health and growth of the technology.



*John Aughey, of Boeing's Training Technology Center, demonstrates the fine points of the Boeing F/A-18 flight simulator to Congresswoman Heather Wilson (NM), during the Capitol Hill Modeling and Simulation Exhibition*

I would like to thank the members of the Caucus who gave freely of their time and energy before and during this important event:

Rep. Bobby Scott, Congressman, D-VA 3rd  
Rep. Paul Gillmor, Congressman, R-OH 5th  
Rep. Steve Pearce, Congressman, R-OH 5th  
Rep. Joe Wilson, Congressman, R-SC 2nd  
Rep. Tom Davis, Congressman, R-VA 11th  
Rep. Charlie Gonzalez, Congressman, D-TX 20th  
Rep. Randy Forbes, Congressman, R-VA-4th  
Rep. Tom Feeney, Congressman, R-FL 24th  
Rep. Doug Lamborn, Congressman, R-CO 5th  
Rep. Heather Wilson, Congresswoman, R-NM 1st

I would also like to thank the following firms and organizations, and their enthusiastic and highly professional representatives, for their participation in the Second Annual Expo, which insured its success: AFRL, AFAMS, Acme Worldwide, Adacel Systems, Alion Science & Technology, The Boeing Company, CAE, Computer Sciences Corporation, Cubic Defense, Forterra/Mimic, Hart Technologies, imedia.it, Inc., JFCOM, L-3 Technologies, Lockheed Martin, Mymic, National Guard, National Nuclear Security Administration, Quantum 3D, Raydon, Soar Technology, Texas A&M at Corpus Christi, United Space Alliance, VMASC, Wiser-SimMedical, Vcom3D, and VTSG.

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# The Global *marketplace*

## French to Set Road Map for Army Network

Reprinted from Defense News

The French Army has embarked on a strategic review called Scorpion to embed principles of network-enabled warfare in current and future armored vehicles, a senior defense French official said.

“Scorpion is the preparation for future land combat systems, intended to build an armaments program to support Army transformation,” said the defense official. Scorpion stands for “system of contact for versatile capabilities and information networking,” and is led by the Délégation Générale pour l’Armement, France’s procurement office.

Scorpion takes as a base the missions assumed in the 2015 model of force structure but also looks ahead to what capabilities will be needed by 2025. Under the Scorpion road map, the General Staff will study the best way to procure the new system of systems and the next generation of armored vehicles. A request for industry opinion is due to go out in June.

The options include a U.S. model of procurement, such as used in the controversial Future Combat Systems program, led by a Boeing-SAIC team; the British approach, as used in the Future Rapid Effects program; and the traditional path of individual vehicle programs.

# Major Program *report*

## F-35 Carrier Variant Completes CDR

Reprinted from *Defense Daily*

Industry and government officials developing the aircraft-carrier version of the F-35 Lightning II stealth fighter aircraft, the F-35C, have achieved a significant milestone by successfully completing the platform’s critical design review, lead contractor Lockheed Martin said.

Completion of the review is a prerequisite for the F-35C, which is under development for the U.S. Navy, to move into low-rate initial production, the company said. Current plans call for the first production version F-35Cs to be built during the F-35’s fourth production lot at the end of the decade. The F-35C will be the sea service’s first stealth aircraft, replacing the F/A-18 Hornet and complementing the newer F/A-18E/F Super Hornet.

“We’re pleased with the critical design review results, which reinforce our confidence in the F-35C’s design,” Dan Crowley, Lockheed Martin executive vice president and F-35 program manager, said in the company’s statement of June 27. “The review highlighted the program’s development progress and the fifth-generation capabilities that the carrier variant will bring to the Navy.” The critical design review was meant

to verify the design maturity of the F-35C and its associated systems.

## Multiyear Award Saves 4.5 Percent, \$410M

Reprinted *Aerospace Daily & Defense Report*

A long-awaited RAND Corporation study over supposed cost savings to buy F-22 Raptors under a multiyear contract says the U.S. Air Force could save \$270 million to \$640 million, with the most likely amount being about \$410 million.

Savings from one three-year award—rather than three one-year awards—would come from spurring competition among parts suppliers, better manufacturing scheduling and streamlining acquisition process costs due to fewer contracts, according the RAND researchers.

“It allows manufacturers to optimize the purchase of parts as well as the production schedule and avoid the need for proposals for future lots,” said Obaid Younossi, lead author and RAND management scientist.

The study was mandated by Congress after an unusually public fight on Capitol Hill a year ago over granting the multiyear authority that pit Lockheed Martin supporters against leaders of the Senate Armed Services Committee.

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free), re-entering the atmosphere to strike its target at a velocity greater than M5.0.

### Enhanced EW Systems Drive Navy to Improve Sensor Suite

Reprinted from *Aviation Week & Space Technology*

The U.S. Navy wants to upgrade its F/A-18E/Fs with an infrared search-and-track system out of concern that increasingly sophisticated electronic jamming systems could thwart the fighter's radar system, leaving pilots "blinded" in air-to-air combat.

Although the service has been upgrading the fighter's radar, and the latest version (the APG-79 with active electronically scanned array) should have enhanced ability to nullify hostile jamming, Navy officials are worried about the proliferation of X-band electronic countermeasures systems, which could degrade radar performance. In particular, China's expansive spending on electronic warfare equipment is being carefully monitored. The service fears this build-up could compromise their own freedom to operate in the Pacific.

### Cyber Ops Depend on Culture Alteration, Elder Says

Reprinted from *Aerospace Daily & Defense Report*

The biggest hurdle the U.S. Air Force and Pentagon have to overcome in developing successful cyber operations is changing the

secrecy culture that has ruled the military mind for decades, says Lt. Gen. Robert Elder, commander, 8th Air Force, Barksdale AFB, Louisiana, the home of the new Cyberspace Command.

"We have to learn to share," he says. Everyone has to transmit their data on to the grid and network to give all of those who need it the best situational awareness, he said.

To that end—and to push the boundaries even more—the Air Force is looking to establish a cadre of cyber warriors and a career path in that field, Elder says. The training, educational and other needs for such a career are being worked out now.

### Access to Innovation

Reprinted from *Defense Daily*

The Defense Department Pilot Mentor-Protégé Program provides incentives to major Defense Department contractors to help small firms (protégé) enhance their capabilities to satisfy Defense Department requirements. It also increases the participation of protégé firms as subcontractors and suppliers under Defense Department contracts, and fosters the establishment of long-term business relationships between protégé firms and major Defense Department contractors. The program will give the National Geospatial-Intelligence Agency and National Security Agency access to innovative and creative small firms that may not

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have been as available in the past, says the National Geospatial-Intelligence Agency.

### **Keep the Harrier Flying**

Reprinted from *Defense Daily*

Funding to keep the Harrier flying will always be there because the short takeoff vertical landing aircraft represents 40 percent of the Marine Corps' tactical air, says Col. Mitch Bauman, AV-8B program manager. "I think we've got the original equipment manufacturer's attention. The leadership knows they have had enough operational experience with it. We know what breaks on it and we know where to put our efforts."

If the F-35B, the Marine Corps' future short takeoff vertical landing aircraft get delayed, Bauman believes the Harrier will be able to fill the gap. "I am sure we'd have to take a hard look, but as long as they kept making parts and we had lead time to understand this thing, and we are using this Fatigue Life Expended, we should be able to make that happen."

The Marine Corps has experience with keeping legacy aircraft flying. Bauman points to the CH-46, which was to be replaced by the MV-22 back in 1991. "We missed that IOC ... 2001, we missed that IOC, and now it is arriving in 2007. The CH-46, we kept it going and the last one was built in 1971," he noted. With the depot concept for the Harrier and if the Marine Corps can get the performance-based logistics in place to incentivize contractors to keep parts flowing, Bauman believes things should work out. "I think we will be OK. We make a joke around here, this is the plane that could. It sure can haul the load."

### **Hands-Off Advance**

Reprinted from *Aviation Week & Space Technology*

A technology that allows pilots to control aircraft systems by voice command has completed a new round of flight trials on a U.K. Army Air Corps Gazelle helicopter. Qinetiq's Direct Voice Input system enables the direct-voice-input control of avionics equipment via standard aircrew helmet microphones and intercom and is speaker-independent—the system does not need to recognize a specific user. This provides aircrew the ability to control aircraft systems using voice commands and access information without removing their hands from the flight controls.

The Direct Voice Input has now amassed more than 30 hours of Defense Ministry-funded flight tests with command recognition rates of more than 90 percent for all users providing effective speech control of non-safety critical avionic functions. Trials have included both Chinook and Gazelle helicopters and involved aircrew from the three branches of the U.K. military.

### **Shelf Life**

Reprinted from *Aviation Week & Space Technology*

The military deploys commercial off-the-shelf information technology with network-centric capability faster than ever to solve urgent

wartime problems. David Wennergren, the Pentagon's deputy chief information officer, tells info tech executives at a symposium in suburban Falls Church, Virginia, that all military services, and even U.S. allies, are collaborating in unprecedented ways to share data.

One example is Blue Force Tracking, a digital battlefield information-sharing capability that uses ground, air and over-the-horizon relays to avert friendly fire incidents. With commercial-off-the-shelf components, it was deployed rapidly for the Army and Marine Corps use.

Another is the Maritime Domain Awareness capability that was created by the Coast Guard for homeland security situational awareness. Wennergren says defense program leaders are being told they must now adapt their out-of-date processes to work with commercial off-the-shelf technology—not the other way around. The Pentagon is now spending \$23.5 billion a year on information technology, and that number should grow five percent per year, according to Input, the Reston, Virginia-based market analysts.

### **The Tank is Back**

Reprinted from *Defense News*

Reversing earlier plans to retire its M1A2 Abrams tanks, the U.S. Army now plans to upgrade the 70-ton battlefield behemoths, making them more lethal, better protected, more networked—and able to serve through 2050. In 1998, the Army had all but written off the tank, which cannot go over most bridges and is too heavy to deploy by air. "We were going to stop producing Abrams in 2005. The line was supposed to go cold," said an official with the Army's Training and Doctrine Command.

But the Abrams' thick skin proved immensely valuable during the Iraq insurgency, fending off enemy tank rounds, rocket-propelled grenades and roadside bombs that crippled lighter vehicles. To prepare the tank for its next decades, the Army is planning improvement.

Early versions of an "M1A3 capabilities development document have traveled from the U.S. Army Armor Center at Fort Knox, Kentucky, to the Training and Doctrine Command at Fort Monroe, Virginia, and will soon go to the Pentagon. At this point, the ideas in the document are considered preliminary and not yet official.

### **Armor Reasserts Role in Canadian Strategy**

Reprinted from *Defense News*

The Afghanistan war has reinstated the tank and heavy artillery to prominent roles in Canada's warfighting plans, taking Army modernization in a sharply different direction than envisioned just several years ago.

The most high-profile acquisition spurred on by the Afghan mission is the Canadian government's decision to spend more than 1 billion Canadian government dollars (\$950 million) on the purchase and in-service support for a fleet of surplus Leopard 2 tanks. Those tanks will be acquired from the Netherlands, while Canada

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will receive another 20 Leopard 2A6M tanks from Germany on loan. The German Leopards will arrive in Afghanistan by August.

Army commander Lt. Gen. Andrew Leslie said lessons learned from Afghanistan have led to faster procurement of more modern equipment, and put a focus on heavier equipment to deal with more potent explosive devices used by insurgents. The Canadian Forces decided three years ago to get rid of the tank in favor of wheeled armored vehicles. But Leslie said tanks were requested by officers in Afghanistan who were finding that wheeled vehicles were getting bogged down in the rough terrain.

### Learning to Fly Off Big Deck Again

Reprinted from *Defense News*

As officials in London prepared to approve construction of two 65,000-metric-ton aircraft carriers, one of Britain's two existing flattops was off the U.S. coast for a refresher course in big-deck carrier operations. "Although we invented carrier operations, we have lost a lot of the knowledge needed to run big decks, and we are relearning it from countries like America and France," said Lt. Jon Llewellyn, flight deck officer on the *HMS Illustrious*.

The Royal Navy last operated a big deck in 1978, when it retired the 54,000-ton *HMS Ark Royal* and its 50-jet air wing. Since then, the British fleet has flown 20-aircraft groups of Harriers and helicopters from three 22,500-ton Invincible-class ships.

Now the Royal Navy is preparing for its return to complex carrier operations with the 2014 commissioning of the *HMS Queen Elizabeth* and the *Prince of Wales* two years later, each capable of operating with air wings of 36 Joint Strike Fighters and other surveillance aircraft.

### Striking Advantage

Reprinted from *Aviation Week*

The U.S. Navy is considering how it might defeat a foe that fields an arsenal of submarines, advanced strike aircraft and conventional ballistic and cruise missiles that could keep American carrier strike forces at bay—perhaps 600-1,000 nautical miles from a critical area such as the Taiwan Strait.

Boeing is working on the Navy's problem with a concept that could put a long-range, unmanned combat aircraft on aircraft carrier decks by 2025. Visually, it will look much like a larger version of the X-45C, which was built for attack missions in heavily defended areas. Internally it has been redesigned to survive carrier operations as well as carry larger weapons and a battery of forward-looking sensors for intelligence, surveillance and reconnaissance.

The concept is one of two contenders, along with Northrop Grumman, for the Navy's unmanned combat air system-demonstrator. It's expected that Boeing's design would expand the stealth capability to cover low-frequency radars as well as the classic high-frequency ranges used by advanced air defense systems.

## Who's where

■ Northrop Grumman has appointed **John Books** vice president of international business development and president of Northrop Grumman International. The retired Air Force major general was director of business development for Northrop's Washington office and for its Air Force and Air National Guard programs.

■ **Maj. Gen. Chris T. Anzalone**, USAF, has been named deputy for test, integration, logistics and fielding for the U.S. Missile Defense Agency, Huntsville, Alabama. He was deputy for test and assessment.

■ **Brig. Gen. Blair E. Hansen**, USAF, has become director of intelligence, surveillance and reconnaissance capabilities/deputy chief of staff for intelligence at USAF Headquarters at the Pentagon.

■ **Rick Armstrong** has been appointed vice president, FlightSafety Simulation for New York-based FlightSafety International. He was vice president, sales and marketing for the Nardam Group, Tulsa, Oklahoma.

■ **Brig. Gen. Anthony J. Tata**, USA, was named deputy director of operations for the Defense Department's Joint IED Defeat Organization in Arlington, Virginia. Tata has been the deputy commanding general (support) with the 10th Mountain Division (Light) in Fort Drum, New York.

■ **Wanda M. Austin** has been named to succeed **William F. Ballhaus, Jr.**, as president and chief executive officer of The Aerospace Corporation, upon his retirement on January 1. Austin is senior vice president of The Aerospace Corporation's National Systems Group in Chantilly, Virginia. She has been with the El Segundo, California-based company since 1979 and has been general manager of the Military Satellite Communication division and senior vice president of the Engineering and Technology Group. Austin will be succeeded by **Manuel De Ponte**, who is general manager of the Milsatcom division. Austin is a member of the NASA Advisory Council and a fellow of the American Institute of Aeronautics and Astronautics.

# Training & Simulation *report*

## **USMC Simulation Moves Staff Training from Sand Table to PC**

Reprinted from *Defense News*

For 20 years, the U.S. Marine Corps staff has learned the art of fire support using a big terrain map whose miniature vehicles and cotton-ball explosions would have looked familiar to Gen. Dwight D. Eisenhower when he planned D-Day.

The combined arms staff trainer does have ceiling-mounted lasers to project red and green dots onto the terrain, but they're controlled by DOS-based computer programs. Aircraft are simulated with a model on a stick.

Now the facility is getting a computer upgrade that will add 3-D representations of fires and effects, allow Marines to use the same kind of communications gear that they will take to the field, and train and entire Marine Air-Ground Task Force staff at one facility. Called CACCTUS (combined arms command and control trainer upgrade system), the estimated \$20 million system is scheduled to begin service in 2008 and reach full capability in 2011.

"CACCTUS takes CAST to the next level," said Maj. J.P. McDonough, who oversees modeling and simulation for Marine Training and Education Command, and serves as requirements officer for CACCTUS.

The first CACCTUS upgrade will take place at the Marine Corps Air Ground Combat Center at Twentynine Palms, California, with upgrades to follow at Camp Lejeune, North Carolina; Camp Pendleton, California; in Hawaii; and in Okinawa, Japan.

"The fire-support teams that sit around that big training board weren't getting any training out of it," McDonough said. "They were just providing input to the staff."

Three-dimensional visuals will allow them to practice calls for fire during battle while they help train the staff. The graphics aren't video-game quality but look good enough to see an explosion or distinguish a tank. "They'll see bad guys and explosions," he said. "When they do a call for fire, they can see the impact and adjust it."

The visuals also will enable the Marines to conduct combined arms training in simulated urban terrain—a capability sorely needed in the Iraq war.

## **Bringing Battlelabs to the Air**

Reprinted from *Aviation Week*

A tool to simulate a more efficient, greener air transportation system integrating all pertinent factors, on the ground as well as in the air, is being introduced by Thales.

Known as Airlab, the simulator is conceived as a civil version of battlefield laboratories developed to study how new military technologies and concepts work in an interoperable network-centric environment. It is based on Thales's own Battlespace Transformation Center in Elancourt, near Paris, and its new

System Oriented UAV Laboratory in Bordeaux.

As the only company in the world providing cockpit, cabin, air traffic management and simulation/training systems, Thales believes it is uniquely equipped to offer such a civil system-of-systems capability, which the Advisory Council for Aeronautics Research in Europe (Acare) is promoting as a way to tackle air traffic congestion and pollution problems.

Similar to the Virtual Air and Space Technology initiative launched in the U.S. by NASA and the Federal Aviation Administration, the multimillion-Euro Airlab facility will support Europe's two major air transport system-of-system initiatives. One is Sesar, a program to implement the Single European Sky, aimed at easing congestion and reducing delays despite a projected tripling of air traffic by 2020. The other is Clean Sky, a parallel effort designed to minimize the impact of air traffic growth on emissions and noise.

Thales is also setting up an Airlab, which is based on open architecture design, in Seattle, where it can serve the U.S.'s Next Generation Air Transport System.

## **Virtual Training for Real-World Combat**

Reprinted from *Aviation Week*

Joint terminal attack controllers play a crucial role in guiding precision air and artillery strikes in Afghanistan and Iraq. But training them is difficult and expensive, as it requires aircraft use. Meggitt Defense Systems of Tustin, California, upgraded its indirect fire/forward air control trainer, or I-FACT, to improve aircraft-simulation qualities and re-create live training exercises. The main improvement is the addition of a head-mounted display, the nVisor SX, from virtual-reality specialist NVIS of Reston, Virginia. It has a resolution of 1,280 x 1,024 pixels and provides a full interactive view of a virtual battlefield. The U.S. Air Force needs that degree of resolution to identify aircraft in live training, says Michael Weeger of Meggitt. "This nearly doubles the capability of the system, and trainees can re-create anything a real aircraft would do."

The upgrade includes another head-mounted display for views acting independently or together, depending on what an instructor wants. New features and functions were added to the software to increase training capabilities. Missions conducted in virtual training mode include fixed- and rotary-wing close air support and close air support using bombers and C-130 gunships. Multiple systems can be linked over a local or wide area network to work with other compliant simulation systems.

## **JLS Supports Taiwan Training Exercise**

Reprinted from Press Release dated June 12, 2007

The Taiwan Ministry of National Defense recently conducted a  
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highly successful training exercise using the Joint Theater Level Simulation (JTLS). Training and technical support were provided onsite by Ellen Roland, JTLS development team leader, Rolands Associates Corporation. This support included running a “shadow game” to preclude unexpected simulation results, acting as the technical controller to manage JTLS and ensuring exercise strategies were properly executed. According to U.S. Pacific Command representatives “the simulation, JTLS, worked so well during the recent CPX, that Ellen Roland volunteered to fulfill numerous emerging requirements from the Taiwan AAR team for detailed model results and battle damage assessment data.”

JTLS is used for decision analysis support, capability demonstration, evaluation of management plans concept design, experimentation, training and exercise support and coalition training among civil-military agencies. JTLS can be used to populate most common operational pictures and interface with C4ISR systems.

The JTLS software is reconfigurable on-the-fly and is configuration managed by the U.S. Joint Forces Command Joint Warfighting Center. It is developed, maintained and distributed by R&A, Monterey, California.

### **Doomsday Simulations Help U.S. Gird for Hurricanes**

Reprinted from Bloomberg.com

The computer screen shows a toxic cloud rolling slowly over buildings, a visualization that permits scientists to record every lethal swirl and eddy and to calculate the toll for a city’s residents.

It’s a far cry from “The Sims,” an addictive computer game that lets users create a virtual universe. As displayed on computers nicknamed “Coyote” and “Thunderbird,” disaster simulations conducted under a \$25 million program run by Sandia and Los Alamos national laboratories are helping the U.S. government predict the impact of chemical or biological attacks, killer hurricanes, or accidents such as the collapse of the bridge on the main highway into Minneapolis.

For years, simulations have helped manage the nuclear weapons stockpile and conduct war games. Now disaster planners are using them to create a “virtual U.S.” in which scientists gird for worst-case scenarios to test the vulnerability of the country’s infrastructure, former White House counterterrorism chief Richard Clarke said.

Simulation programs permit scientists to “imagine a whole series of events and one by one run the tests,” said Clarke, an early booster of the technique. “It’s as close to reality as you can get.”

Spurred by the twin disasters of September 11 and Hurricane Katrina, officials at the Department of Homeland Security have gotten the message. They’re using graphic modeling to predict a disaster’s human and economic toll, expose weak spots in defenses and train policy makers in improving their crisis responses.

As early as this month, the Homeland Security Department will release results from a the second part of a simulation study of a flu

pandemic. The initial phase of the test concluded that a merely adequate vaccine given immediately would be more effective than delayed inoculations with a better drug.

By the end of this year, the lab will complete a study on the Midwest’s New Madrid Fault, a break in the earth’s crust that some scientists fear could produce an earthquake more devastating than one caused by the San Andreas Fault in California.

### **Simulator System to Study Pilot Response to Lasers**

Reprinted from Aerospace Daily & Defense Report

The U.S. Air Force, Federal Aviation Administration and Northrop Grumman have developed a one-of-a-kind laser positioning system in a Boeing 737 flight simulator to study flight performance while aircrews are exposed to lasers.

Military and federal civil aviation authorities have become concerned about the possibility that terrorists could use lasers to temporarily blind pilots during critical takeoff or landing moments, causing crashes or other incidents. Such lasers are easily obtained, and there have been several incidents in which commercial pilots have said they were “hit” by lasers.

Northrop Grumman’s Information Technology sector team, which included partners Taboada Research Instruments and Cherokee CRC, assisted the Air Force and Federal Aviation Administration in creating the system, which will help define how pilots respond to lasers when pointed at aircraft during flight.

The researchers integrated eye-safe lasers in the 737 flight simulator to monitor pilots’ reactions so that new flight safety measures can be developed to counter the threat.

## **Calendar of Upcoming *events***

Mark your calendars for these upcoming events focused on training and modeling & simulation:

**AUGUST 28-30** • Joint ADL Co-Lab Implementation Fest • Rosen Centre Hotel • Orlando, FL

**SEPTEMBER 11-13** • MODSIM World Conference & Expo • Virginia Beach Convention Center • Virginia Beach, VA

**OCTOBER 9-10, 2007** • International Disaster and Emergency Resilience Conference and Exhibition • Winchester House • London, UK

**NOVEMBER 26-29, 2007** • I/ITSEC 2007 Conference • Orange County Convention Center • Orlando, Florida

Please visit **[www.trainingsystems.org/events](http://www.trainingsystems.org/events)** for complete details or contact Patrick Rowe at **(703) 247-9471** or **[prowe@ndia.org](mailto:prowe@ndia.org)** for more information.



## M&S Legislation Passes the House

The House of Representatives passed unanimously H. Res. 487, legislation declaring modeling and simulation a national critical technology that provides unparalleled advancements in American competitiveness, develops new and innovative ways to protect our homeland and our war fighters, and brings high-tech jobs and economic prosperity to our communities.

The passage of H. Res. 487:

- Formally honors the contribution of M&S technology to the security and prosperity of the United States;
- Recognizes M&S as a National Critical Technology;
- Acknowledges the significant impacts of M&S on a breadth of fields including defense, space, national disaster response, medicine, transportation and construction;
- Urges Congress to continue to place emphasis on math and science as key disciplines in elementary and secondary education, and encourages the expansion of modeling and simulation within higher education; and,
- Affirms the need to study the national economic impact of this important industry.

Congressman J. Randy Forbes (VA-04), Chairman of the Congressional Modeling & Simulation Caucus, introduced H. Res. 487 last month as bipartisan legislation to formally recognize

the contribution of modeling and simulation (M&S) on our nation's economic prosperity and national security. Eight Members of the M&S Caucus, Congresspersons Mike Conaway (TX-11), Jo Ann Davis (VA-01), Tom Davis (VA-11), Thelma Drake (VA-02), Tom Feeney (FL-24), Ric Keller (FL-08), Solomon Ortiz (TX-27), Heather Wilson (NM-01), and Bobby Scott (VA-03) have joined as original cosponsors of this legislation.

Today the scope and influence of M&S reaches well beyond the defense industry. Modeling and simulation has been responsible for the progressive developments in health care, homeland security, construction and transportation. Members of the M&S community come from diverse backgrounds such as psychology, medicine, computer science, mathematics, engineering and physics. Many of the technologies are universally applicable and may be used in multiple fields, including visualization tools, analytical tools, knowledge management and behavioral representations. In addition, M&S provides lower-cost opportunities for joint training and development of operational plans and assessments in dangerous situations, such as warfighting or national disasters. H. Res. 487 was referred to the House Committee on Science and Technology, and on June 22nd, was reported out of Committee by voice vote.

### Language for an amendment to the Defense Appropriations Bill regarding simulation:

19. AN AMENDMENT TO BE OFFERED BY REPRESENTATIVE SCOTT OF VIRGINIA, OR HIS DESIGNEE, DEBATABLE FOR 10 MINUTES

Title II, add at the end the following:

SEC. 2II. MODELING, ANALYSIS, AND SIMULATION OF MILITARY AND NON-MILITARY OPERATIONS IN COMPLEX URBAN ENVIRONMENTS.

Congress finds the following:

(1) Modeling, Analysis, and Simulation Technology has become an essential component in ensuring that we meet the defense challenges of the 21st century. It allows us to build and develop models of complex systems, effectively sharpen the tools, procedures, and decisions needed to address difficult problems, and determine how certain actions will effect the end result before implementing the plan in real life, thereby providing strategic, tactical and financial benefits. Every effort should be made to include Modeling, Analysis and Simulation Technology in the training and planning doctrines of the Department of Defense.

(2) Current and future military operations, and emergency management of natural and man-made disasters, do and will continue to involve operations in highly complex, urban environments. These environments include complex geographical, communications, transportation, informational, social, political, and public support subsystems. The interdependence of these subsystems and the cascading effects of warfare or disasters imposed upon them should be modeled in a computer simulation environment. It is important for the security and safety of the Department of Defense to study and understand the effects of warfare and disasters on the resiliency of urban environments and to develop a computer modeling and simulation decision-making tool for emergency consequence management of military, natural and man-made disasters in complex urban environments.

# DoD Provides Further Details on New Modeling and Simulation Approach

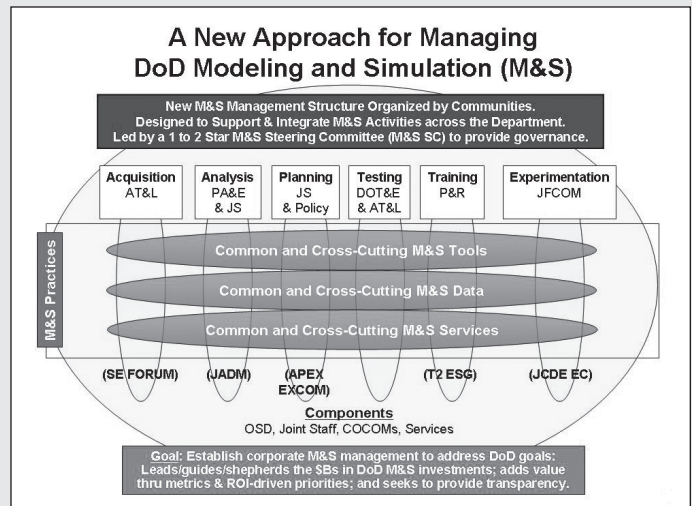
*This is the second of two articles on the revamping of the Department of Defense approach to Modeling and Simulation.*

A program decision memorandum issued in the fall of 2005 required DoD to revise how it manages M&S. The Department has since revised DoD Directive 5000.59 (currently in formal coordination), and established a flag-officer level M&S Steering Committee (M&S SC) and an M&S Integrated Process Team (M&S IPT) to assist the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) in managing the Department's common and cross-cutting M&S efforts. The Modeling and Simulation Coordination Office's (M&S CO) mission is to coordinate these efforts.

The reorganization and alignment depicted in the figure at right was announced in a press release in mid-November, 2006. The Defense Modeling and Simulation Office (DMSO) became the Modeling and Simulation Coordination Office, six modeling and simulation communities were established, and management and oversight of the department's day-to-day M&S activities structured. The chart, affectionately called the "Surfboard Chart", illustrates the integrated and collaborative approach required of the department and its components to achieve the goals established in its Strategic Vision statement.

So, what does all this mean to those of us in the Training Community? With respect to the future, it will mean that the significant investment in modeling and simulation programs will produce tools, services and data that are interoperable among the components, and are reusable and efficient for the users. To realize this future potential, each of the communities is developing business plans that will shape and drive their investments in those tools, services, and data that will make a difference. To make a difference, these must be common to multiple communities and address and resolve issues that cut across the previously stove-piped, vertical interests of those communities. To be truly effective future investment must be made in the most common and cross-cutting enhancements in modeling and simulation.

To demonstrate how this is working today and how the Department is taking the first small steps toward the Vision and its goals, we'll show how two near term training community sponsored projects approved for funding by the M&S Steering



Committee in its 2006 round of project calls, are aimed at making a difference in supporting needs of more than one M&S community.

The Joint Data Alternatives study, initiated by the Joint Forces Command (JFCOM) is applicable to and supports needs of the Intel, Training, Acquisition, Testing, Analysis, Experimentation, and Adaptive Planning communities and to specific functional user areas for M&S including Logistics, Command & Control (C2), Force Application, Force Protection and other M&S use areas. The report out of the study will summarize analysis of cost-performance tradeoffs and architectural impacts to produce mission relevant, event-ready simulation databases. The analysis will evaluate and compare the alternatives for developing the Joint Rapid Scenario Generation Capability (JRSG) and make a recommendation to the eventual Milestone Decision Authority based on this evaluation. The resultant analyses will aid proper decision making concerning costs, risks and tradeoffs needed to deliver better data for Rapid Scenario Generation – a critical gap in effective training and mission rehearsal capabilities.

The second key effort is the Live, Virtual Constructive Architecture (LVCAR) study. The Acquisition, Testing, Training, Analysis and Experimentation communities, within and among Services, all require rapidly-composable, distributed LVC envi-

ronments<sup>1</sup> for community missions. The primary deliverable of this effort is a recommended roadmap for LVC architectures. If warranted, this architecture roadmap would subsequently guide efforts to develop prototypes, revise policies, and transition existing representation assets. The development of the architecture roadmap will require a number of sub-efforts, and the effective socialization of the roadmap will require that each of these sub-efforts be transparent and accessible across interested user communities. Current and projected LVC environment functional requirements, mapped against user communities in the context of use cases, are to drive the analysis – thus considering and analyzing requirements of multiple M&S communities. This will provide a characterization of the user communities, including coalition partners.

We need to restate the meaning, then, to the Training Community From an oversight aspect, focusing of modeling and simulation requirements will be guided by management and oversight of the Joint Training Senior Advisory Group (T2 SAG) and its subordinate Training Transformation Joint Integrated Process Team (T2 JIPT). This alignment ensures that all M&S activities are aligned with the overall Joint Training Vision and supportive of that vision. Because of the realization that future developments in M&S technologies must be common to multiple functional requirements and cut across multiple community needs, M&S developments within the training community will, by design, support M&S requirements for other communities as well. On the flip side, developments supported or initiated by other communities will meet and support the needs of the training community. Because of the horizontal integration of the communities driven by the need for common data, tools, and services, the Department should realize more efficient and effective M&S developments that are free of redundancies and single use characteristics. The bottom line for the training community is that commanders will be able to train in a Live Virtual Constructive environment as a matter of course, without ad hoc, cost prohibitive and extraordinary measures. Commanders and trainers will be able to build training and mission rehearsal scenarios quickly and efficiently through reuse of data, using tools and services that are common to other disparate functions, for example testing or experimentation.

<sup>1</sup> may be composed of all or any subset of LVC capabilities (i.e., L, V, C, LV, LC, VC, LVC).

# Contracts

## **“Black” Spending Doubles Since 1995**

Reprinted from *Defense News*

The Pentagon’s 2008 spending blueprint seeks \$31.9 billion for classified programs, substantially higher than the \$19.1 billion the U.S. military was devoting to “black” initiatives in 2001, according to a new analysis. That’s 18 percent of the 2008 acquisition total of \$176.8 billion, according to the July 25 analysis, compiled by Steven Kosiak of the Washington-based Center for Strategic and Budgetary Assessments.

It includes \$14.4 billion for procurement, 14 percent of the total; and \$17.5 billion for research and development, 23 percent of the total, the analysis said.

The total black request for 2008 is down one percent from last year and three percent less than 2006—but it does not include war-related funds, just monies sought in the spending request currently being sliced and diced on Capitol Hill. “It is likely that if war-related funding were included, the FY08 total for classified acquisition programs would surpass these previous totals,” the study said.

Black spending “has more than doubled in real terms since 1995, when funding for these programs reached its post-Cold War low,” the study said. Since then, “funding for classified acquisition programs has increased by about 112 percent in real terms—a substantially higher rate than funding for acquisition programs overall, which has grown by about 77 percent.”

## **Bath, Not Northrop, May Build USN’s 1st DDG 1000**

Reprinted from *Defense News*

U.S. Navy and industry officials are discussing a plan to shift construction of the first DDG 1000 *Zumwalt*-class destroyer from Northrop Grumman’s Ingalls shipyard to the General Dynamics yard at Bath, Maine. Details of the plan still are being worked out, but if approved, the move would be a boost for Bath Iron Works, which is running out of shipbuilding work.

Northrop Grumman and General Dynamics officials declined to speak publicly on the issue. A Navy spokesman, Lt. Cmdr. John Schofield, would only confirm the discussions. “The Navy, Northrop Grumman and General Dynamics are exploring different options on the construction schedules of the DDG 1000 dual lead ships,” Schofield said July 17.

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